

**UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

POWER2B, INC., <i>Plaintiff,</i> v. SAMSUNG ELECTRONICS CO., LTD. and SAMSUNG ELECTRONICS AMERICA, INC. <i>Defendants.</i>	Case No. 6:20-cv-01183
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COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Power2B, Inc. (Power2B) files this complaint for patent infringement against Defendants Samsung Electronics Co., Ltd. (SEC) and Samsung Electronics America, Inc. (SEA) (collectively, Samsung) and states as follows:

I. NATURE OF THE ACTION

1. This is an original complaint for patent infringement pursuant to 35 U.S.C. §§ 100 *et seq.* As further stated herein, Power2B alleges that Samsung infringes one or more claims of patents owned by Power2B.

II. THE PARTIES

2. Power2B is a Delaware corporation having an address of 1302 Ozone Ave., Santa Monica, CA 90405.

3. Upon information and belief, SEC is a corporation organized under the laws of the Republic of Korea, having a place of business at 129, Samsung-Ro, Yeongtong-Gu, Gyeonggi, 16677, Republic of Korea. SEC may be served with process pursuant to Federal Rule of Civil Procedure 4(f)(1).

4. Upon information and belief, SEA is a corporation organized under the laws of New York, having a principal place of business at 85 Challenger Rd., Ridgefield Park, NJ 97660. SEA maintains a place of business in this District at 12100 Samsung Blvd., Austin, TX 78754. SEA may be served with process through its registered agent, CT Corporation System, 1999 Bryan St., Ste. 900, Dallas, TX 75201.

5. SEC designs, manufactures, and provides to the United States and other markets a wide variety of products and services, including consumer electronics, mobile phones, handheld devices, tablets, laptops and other personal computers, storage devices, televisions, and electronic devices.

6. Upon information and belief, SEA is a wholly-owned subsidiary of SEC and is responsible for domestic distribution of Samsung's consumer electronics products, including the products accused of infringement herein.

III. JURISDICTION AND VENUE

7. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

8. This Court has personal jurisdiction over Samsung because it has conducted and continues to regularly conduct business within the State of Texas and this District. Samsung has purposefully and voluntarily availed itself of the privileges of conducting business in the United States, the State of Texas, and this District by continuously and systematically placing goods into the stream of commerce through an established distribution channel with the expectation that they will be purchased by consumers in this District. Samsung directly and/or through intermediaries (including distributors, sales agents, and others), ships, distributes, sells, offers to sell, imports, advertises, makes, and/or uses its products (including but not limited to the

products accused of infringement herein) in the United States, the State of Texas, and this District.

9. SEA is registered to do business in Texas and maintains an agent for service of process in Texas. SEA maintains places of business within the Western District of Texas, including at 12100 Samsung Blvd., Austin, TX 78754.

10. Upon information and belief, Samsung has authorized retailers that offer and sell products on its behalf in this District, including products accused of infringement herein. Upon information and belief, these include Walmart, e.g. at 4230 Franklin Ave., Waco, TX 76710; Target, e.g. at 5401 Bosque Blvd., Waco, TX 76710; and Best Buy, e.g. at 4627 S. Jack Kultgen Expy., Waco, TX 76706, among many others.

11. Power2B's causes of action arise directly from Samsung's business contacts and other activities in the State of Texas and this District.

12. Samsung has derived substantial revenues from its infringing acts within the State of Texas and this District.

13. Venue is proper in this District as to SEC pursuant to 28 U.S.C. § 1391(c)(3) because it is not a resident of the United States and may therefore be sued in any judicial district.

14. Venue is proper in this District as to SEA pursuant to 28 U.S.C. § 1400(b) because SEA has committed acts of infringement in this District and has regular and established places of business in this District.

15. Joinder of SEC and SEA is proper because they are related entities that are either jointly and severally liable for infringement, or that make, use, sell, offer to sell, and/or import the same or similar products accused of infringement herein. Further, upon information and belief, SEC and SEA use the same underlying hardware and/or software in their infringing

products and therefore the factual question of infringement will substantially overlap between SEC and SEA. Power2B anticipates there will be substantial overlap with respect to discovery.

16. Samsung has committed acts of infringement in this District and does business in this District, including making sales and/or providing service and support for customers and/or end-users in this District. Samsung purposefully and voluntarily sold one or more infringing products with the expectation they would be purchased in this District. These infringing products have been and continue to be purchased in this District. Thus, Samsung has committed acts of infringement within the United States, the State of Texas, and this District.

IV. THE ASSERTED PATENTS

17. On December 17, 2013, the United States Patent and Trademark Office (USPTO) duly and legally issued United States Patent No. 8,610,675 (the '675 patent) entitled "Interactive Devices" and naming Sarah Michelle Lipman, Eran Kali, Boris Gutin, Moti Margalit, Robert Michael Lipman, and Ken Zwiebel as inventors. A copy of the '675 patent is submitted herewith as Exhibit A.

18. On January 7, 2014, the USPTO duly and legally issued United States Patent No. 8,624,850 (the '850 patent) entitled "Displays and Information Input Devices" and naming Sarah Michelle Lipman, Eran Kali, Boris Gutin, Moti Margalit, Robert Michael Lipman, and Ken Zwiebel as inventors. A copy of the '850 patent is submitted herewith as Exhibit B.

19. On April 19, 2016, the USPTO duly and legally issued United States Patent No. 9,317,170 (the '170 patent) entitled "Interactive Devices" and naming Sarah Michelle Lipman, Eran Kali, Boris Gutin, Moti Margalit, Robert Michael Lipman, and Ken Zwiebel as inventors. A copy of the '170 patent is submitted herewith as Exhibit C.

20. On February 14, 2017, the USPTO duly and legally issued United States Patent No. 9,569,093 (the '093 patent) entitled "Displays and Information Input Devices" and naming Sarah Michelle Lipman, Eran Kali, Boris Gutin, Moti Margalit, Robert Michael Lipman, and Ken Zwiebel as inventors. A copy of the '093 patent is submitted herewith as Exhibit D.

21. On December 18, 2018, the USPTO duly and legally issued United States Patent No. 10,156,931 (the '931 patent) entitled "Displays and Information Input Devices" and naming Eran Kali, Sarah Michelle Lipman, Boris Gutin, and Moti Margalit as inventors. A copy of the '931 patent is submitted herewith as Exhibit E.

22. Power2B asserts and alleges that Samsung has infringed and continues to infringe at least one claim of each of the '675, '850, '170, '093 and '931 patents (collectively, the Asserted Patents).

V. FACTUAL ALLEGATIONS

Overview of the Patented Technology

23. Sarah and Robert Lipman founded Power2B in 2004. Ms. Lipman recognized that then-existing electronic devices such as personal digital assistants (PDAs), mobile devices, tablets, and televisions were difficult to navigate and manipulate, and further lacked intuitive user interfaces. Power2B was formed to develop new intuitive and interactive interface technologies for electronic devices.

24. Power2B's inventive interface technologies include power-efficient and cost-effective sensors and corresponding circuitry that detect positions and/or movements of a user's hand or objects near or proximate to a device, and convert such positions and/or movements into meaningful inputs for controlling device operations. For example, Power2B's patented technologies implement object-sensing or gesture-sensing interfaces that translate user gestures

or movements into navigation commands and other operations, without requiring contact between the user and the device. Example gestures include moving a hand or finger toward or away from a device, hand-hovering, pointing, drawing two fingers together in a “pinching” motion near or in proximity to a device, waving or swiping a hand over a device from left to right, and so on.

25. All applicable rights have been assigned to Power2B, and Power2B is the owner of the Asserted Patents and the patented inventions relating to its interface technology.

Power2B’s Interactions with Samsung

26. Between 2006 and 2010, Power2B had multiple meetings with Samsung executives, during which Power2B provided live demonstrations and disclosed prototypes of its interface technologies to Samsung. Power2B also provided Samsung with proprietary and confidential technical information related to its interface technologies.

27. Samsung expressed interest in licensing or otherwise obtaining the right to use Power2B’s patented technology.

28. Through these dealings, Samsung gained actual knowledge and notice of Power2B’s patents, including patents comprising the Asserted Patents, and patent applications from which patents comprising the Asserted Patents issued.

29. After receiving detailed technical information from Power2B about Power2B’s technologies, Samsung broke off communications with Power2B.

30. In 2012, around two years after Power2B’s initial negotiations with Samsung ended, Samsung reengaged with Power2B and requested additional specific and detailed technical information about Power2B’s interface technology, including information related to gesture-sensing, coordinate position extraction, chipsets, supporting circuitry, power

consumption, screen thickness, capacitive screen capabilities, and sensor quantities and arrangements. Upon information and belief, Samsung requested information in advance of Samsung's production of the Accused Products, and Samsung intended to and did use such information in the production of the Accused Products.

31. Based on Samsung's representations and the parties' previous interactions, Power2B believed that Samsung had a genuine interest in licensing or otherwise acquiring the right to use Power2B's patented technology, and thus provided additional information to Samsung. But shortly after Power2B provided the information, Samsung again ceased its discussions with Power2B.

32. Approximately one year later, Samsung released its Galaxy S4 handset which utilized Power2B's patented technology and information Power2B provided to Samsung.

33. Despite representations that it wished to license or otherwise acquire the right to use Power2B's patented technologies, Samsung utilized information acquired from Power2B to develop the Accused Products.

34. At all times, Power2B believed that Samsung was acting in good faith and that Samsung was serious and genuinely interested licensing or otherwise acquiring the right to use Power2B's patented technology.

The Accused Products

35. Samsung has sold and sells devices incorporating Power2B's patented object-sensing/gesture-sensing interfaces, including Samsung's Galaxy S4-S10 and S20 devices and

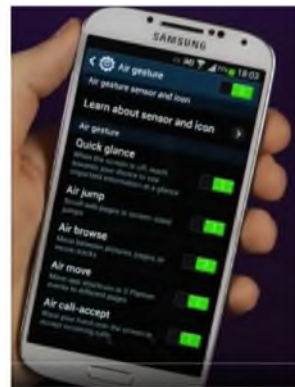
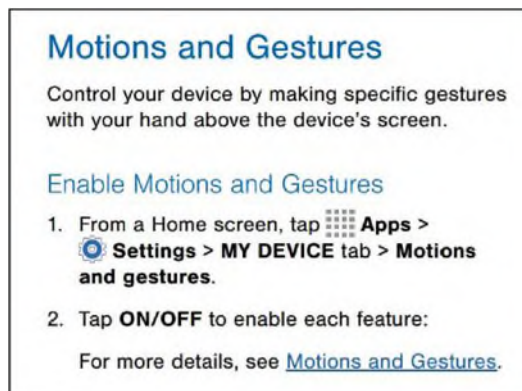
associated product lines, and Samsung's Note 3-10 and Note 20 devices and associated product lines (the Accused Products).¹

36. For example, the Accused Products include infringing interfaces that incorporate one or more object-detection sensors, including ambient light sensors, photosensors, proximity sensors, and combinations thereof.

37. Also, the Accused Products are configured to turn the device screen on/off based on a position, proximity, or movement of an object detected by infringing interfaces. In addition, the Accused Products employ the infringing interfaces to support gesture controls, gesture wake up, easy mute, and easy screen turn on.

38. Moreover, Samsung specifically marketed the Accused Products, the infringing interfaces, and supported gesture-sensing functions called "Air gestures." Samsung's "Air gestures" are present in at least Samsung's Galaxy S4-7 devices and Note 3-4 devices.

39. Below is a portion of the Galaxy S4 User Manual and a representative screen shot of the Galaxy S4 showing Samsung's "Air gesture" menu and a corresponding suite of supported gesture-sensing functions:



¹Each device and associated product line includes all corresponding devices designated under the same "S" or "Note" name, including, for example, devices designated as "mini," "plus," "sport," "edge," "ultra," and the like.

40. Samsung also implemented Power2B's patented object-sensing or gesture-sensing interfaces to support gesture controls in one or more SmartTV product lines, including at least Samsung's F-Series SmartTV.²

Samsung's Acts of Infringement

41. Samsung has made, used, sold, offered to sell and/or imported infringing products, and continues to do so, including the Accused Products.

42. By doing so, Samsung has directly infringed the Asserted Patents.

43. Samsung has engaged and continues to engage in a pattern of conduct intended to induce and/or contribute to the infringement of others, such as its customers and end-users. These actions have included and include making, selling, offering to sell, and/or importing products that infringe the Asserted Patents.

44. Through its actions, Samsung induces and/or contributes to the infringement of the Asserted Patents, and thus indirectly infringes the Asserted Patents.

45. There is an actual, substantial, and continuing justiciable controversy between Power2B and Samsung regarding Samsung's infringement of the Asserted Patents. Absent a judgment and injunction from this Court, Samsung will continue to infringe the Asserted Patents and cause damage and irreparable harm to Power2B.

46. Despite being aware and having knowledge of Power2B's patents, and recognizing the value and benefits of Power2B's patented technology, Samsung has elected to infringe the Asserted Patents, including by incorporating Power2B's technology into at least the Accused Products.

²See, e.g., <https://www.samsung.com/in/support/tv-audio-video/what-is-gesture-control-in-samsung-f-series-smart-tv/>.

47. Samsung's infringement is willful. Samsung continues to commit acts of infringement despite a high likelihood that its actions constitute infringement, and Samsung knew or should have known that its actions constituted an unjustifiably high risk of infringement.

48. Samsung's acts of infringement have been willful as of the date it became aware of the patented technology/invention(s) and/or the Asserted Patents, and no later than the filing of this complaint for patent infringement and/or the date this complaint for patent infringement was served on Samsung.

49. In accordance with 35 U.S.C. § 287, Samsung has had actual notice and knowledge of each of the Asserted Patents since at least as early as 2006, and otherwise had such actual notice and knowledge at all relevant times, and no later than the filing of this complaint for patent infringement and/or the date this complaint for patent infringement was served on Samsung.

50. Samsung cannot avail itself of any defense pursuant to 35 U.S.C. § 287 as Power2B is under no obligation to mark a patented product or the performance of a patented method, and at no time was Power2B or any predecessor-in-interest to Power2B subject to an obligation to mark a patented product or the performance of a patented method.

VI. COUNT ONE
(Infringement of U.S. Patent No. 8,610,675)

51. Power2B incorporates the preceding paragraphs by reference as if fully set forth.

52. Power2B owns all right, title and interest in and to the '675 patent, and holds all substantial rights pertinent thereto, including the right to sue and recover for all past, current, and future damages for Samsung's infringement.

53. The '675 patent is valid and enforceable and directed to patentable subject matter.

54. Through at least the Accused Products, Samsung infringes at least claims 1 and 13 of the '675 patent.

55. Claim 1 of the '675 patent recites: a position sensing assembly.

56. The Accused Products are position sensing assemblies because they include one or more object-detection sensors configured to sense the position of objects.

57. Claim 1 of the '675 patent recites: an interactive surface element defining a surface.

58. The Accused Products include an interactive screen that defines a surface. For example, the Accused Products have Organic Light Emitting Diode (OLED) displays or Active Matrix Organic Light Emitting Diode (AMOLED) displays.

59. Claim 1 of the '675 patent recites: at least one pixel array comprising a plurality of detector elements configured to detect electromagnetic radiation at a baseline level, the at least one pixel array being configured to sense a position of at least one object with respect to a surface thereof according to locations of ones of the plurality of detector elements at which at least one of an amount of radiation detected and a change in the amount of radiation detected exceeds a predetermined threshold, the at least one pixel array being configured to sense at least a position of the at least one object with respect to the at least one pixel array when the at least one object has at least a predetermined degree of propinquity to the at least one pixel array.

60. The Accused Products include one or more object-detection sensors, which include a pixel array having a plurality of detector elements that detect electromagnetic radiation at a baseline level (e.g. ambient light), sense a position of an object with respect to a surface according to the location of the detector elements, and sense when the object has a predetermined degree of propinquity or proximity based on the amount and change of radiation detected

exceeding a predetermined threshold. For example, the Accused Products turn the screen on/off based on the position and proximity of an object to the object-detection sensor. In order to detect the position and proximity of the object, the proximity sensor detects the amount and change to electromagnetic radiation relative to a baseline level, such as ambient light.

61. In addition, the Samsung Galaxy S4-S6 and Note 3-4 devices support a suite of “Air gesture” features, which require the object-detection sensor to accurately detect electromagnetic radiation, sense the position of an object, and sense when the object is within a predetermined degree of proximity based on the amount and change of radiation relative to a threshold.

62. Likewise, the Samsung Galaxy S7-S20 and Note 5-20 devices support gesture controls, gesture wake up, easy mute, and easy screen turn on. Each of these features requires the object-detection sensor to accurately detect electromagnetic radiation reflected by an object (e.g. a hand), sense the position of the object, and sense when the object is within a predetermined degree of proximity based on the amount and change of radiation relative to a threshold.

63. Claim 1 of the '675 patent recites: circuitry coupled to and receiving an output from the at least one pixel array receiving, the circuitry being configured to provide a non-imagewise input representing the position of the at least one object relative to the at least one pixel array.

64. The Accused Products each have at least one processor (e.g. Hummingbird or Exynos processors) that receives a non-imagewise input from the object-detection sensor and instructs the device to perform a function relating to the non-imagewise input, and circuitry coupled to the object-detection sensor to convey the non-imagewise input to the main processor.

For example, the processor in each Accused Product executes or performs gesture controls such as gesture wake up, easy mute, and easy screen turn on based on the non-imagewise input from the object-detection sensor.

65. Claim 1 of the '675 patent recites: wherein the change in the amount of radiation detected results from ones of the plurality of detector elements detecting reflected light from the object in addition to detecting the radiation at the baseline level.

66. The object-detection sensor for each Accused Product includes detector elements that detect ambient light and changes to the detected amount of light caused by a proximate object reflecting light toward the sensor.

67. Samsung has infringed and continues to infringe the '675 patent under 35 U.S.C. § 271(a), directly, literally and/or under the doctrine of equivalents, by making, using, selling, and/or offering to sell in the United States and/or importing into the United States, the Accused Products, during the term of the '675 patent.

68. Samsung has actual knowledge of the '675 patent, and has had knowledge of the '675 patent at all relevant times, and knows the above-described actions, if taken, would constitute infringement of the '675 patent.

69. Alternatively, Samsung believes there is a high probability that others will infringe the '675 patent as a result of its actions but has remained willfully blind to the infringing nature of those actions.

70. Samsung took the above-described actions with the intent to cause acts of infringement of the '675 patent by others, such as its customers and end-users.

71. Samsung has actively induced infringement and continues to actively induce infringement of the '675 patent under 35 U.S.C. § 271(b) by making, selling, offering to sell,

and/or importing the Accused Products, and through activities relating to selling, marketing, advertising, promotion, support, and/or distribution of the Accused Products.

72. Samsung infringes the '675 patent by contributing to the infringement of others, such as its customers and end-users, by making, selling, offering to sell, and/or importing or exporting one or more components of the Accused Products used to practice one or more claims of the '675 patent, that constitute a material part of the invention(s) claimed in the '675 patent, and that have no substantial non-infringing use, with knowledge that such components are especially made or adapted for use in infringing the '675 patent.

73. Through its actions Samsung infringes the '675 patent under 35 U.S.C. § 271(c).

74. Samsung's actions and infringement of the '675 patent are without license or authorization from Power2B.

75. Samsung's acts of infringement have caused Power2B to suffer damages. Power2B is entitled to and seeks to recover from Samsung pursuant to 35 U.S.C. § 284 the damages it has sustained as a result of Samsung's wrongful actions in an amount subject to proof at trial, and in no event less than a reasonable royalty, together with interest and costs.

76. Additionally, Samsung's acts of infringement have caused and continue to cause immediate and irreparable harm to Power2B. Unless such acts of infringement are permanently enjoined by the Court, Samsung will continue to cause immediate and irreparable harm to Power2B for which there is no adequate remedy at law. Power2B is entitled to and seeks injunctive relief pursuant to 35 U.S.C. § 283.

77. Samsung's acts of infringement have at all relevant times been willful and/or Samsung has acted with bad faith.

78. Power2B is entitled to and seeks to recover from Samsung pursuant to 35 U.S.C. § 284 the damages it has sustained as a result of Samsung's willful/bad faith infringement in an amount up to three times the amount of damages found or assessed.

VII. COUNT TWO
(Infringement of U.S. Patent No. 8,624,850)

79. Power2B incorporates the preceding paragraphs by reference as if fully set forth.

80. Power2B owns all right, title and interest in and to the '850 patent, and holds all substantial rights pertinent thereto, including the right to sue and recover for all past, current, and future damages for Samsung's infringement.

81. The '850 patent is valid and enforceable and directed to patentable subject matter.

82. Through at least the Accused Products, Samsung infringes at least claims 15, and 31 of the '850 patent.

83. Claim 15 of the '850 patent recites: an integrated display and input device.

84. The Accused Products are input devices having an integrated display. For example, the Accused Products have integrated Organic Light Emitting Diode (OLED) displays or Active Matrix Organic Light Emitting Diode (AMOLED) displays.

85. Claim 15 of the '850 patent recites: a pixel array configured to provide a visually sensible output.

86. The Accused Products include a pixel array configured to provide a visually sensible output. For example, the Accused Products have Organic Light Emitting Diode (OLED) or Active Matrix Organic Light Emitting Diode (AMOLED) displays, which are pixel arrays that provide visually sensible outputs.

87. Claim 15 of the '850 patent recites: at least one sensor configured to sense at least a position of at least one object with respect to the pixel array when the at least one object has at least a predetermined degree of propinquity to the pixel array.

88. The Accused Products include one or more object-detection sensors that are configured to sense a position of at least one object with respect to the pixel array when the at least one object has at least a predetermined degree of propinquity to the pixel array. For example, the object-detection sensor for each Accused Product detects light or electromagnetic radiation corresponding to the object to determine its position when an object is close or proximate to the device.

89. Claim 15 of the '850 patent recites: circuitry configured to receive an output from the at least one sensor and to provide a non-imagewise input that is representative of the position of the at least one object relative to the pixel array.

90. The Accused Products include circuitry configured to receive an output from the at least one sensor and to provide a non-imagewise input that is representative of the position of the at least one object relative to the pixel array. For example, the object-detection sensor for each Accused Product includes circuitry to convert raw signals received by photodiode sensors into non-imagewise inputs or signals, where the non-imagewise inputs represent the position of the object relative to the pixel array.

91. Claim 15 of the '850 patent recites: wherein the at least one sensor includes a detector assembly arranged at least one edge of a viewing plane defining plate.

92. The object-detection sensors in the Accused Products includes a detector assembly arranged at least one edge of a viewing plane defining plate. For example, the Accused products have OLED display or an AMOLED display, which are viewing plane defining plates.

The object-detection sensors for respective Accused Products are arranged at the top or at the edge of the displays.

93. Samsung has infringed and continues to infringe the '850 patent under 35 U.S.C. § 271(a), directly, literally and/or under the doctrine of equivalents, by making, using, selling, and/or offering to sell in the United States and/or importing into the United States, the Accused Products, during the term of the '850 patent.

94. Samsung has actual knowledge of the '850 patent, and has had knowledge of the '850 patent at all relevant times, and knows the above-described actions, if taken, would constitute infringement of the '850 patent.

95. Alternatively, Samsung believes there is a high probability that others will infringe the '850 patent as a result of its actions but has remained willfully blind to the infringing nature of those actions.

96. Samsung took the above-described actions with the intent to cause acts of infringement of the '850 patent by others, such as its customers and end-users.

97. Samsung has actively induced infringement and continues to actively induce infringement of the '850 patent under 35 U.S.C. § 271(b) by making, selling, offering to sell and/or importing the Accused Products, and through activities relating to selling, marketing, advertising, promotion, support, and/or distribution of the Accused Products.

98. Samsung infringes the '850 patent by contributing to the infringement of others, such as its customers and end-users, by making, selling, offering to sell, and/or importing or exporting one or more components of the Accused Products used to practice one or more claims of the '850 patent, that constitute a material part of the invention(s) claimed in the '850 patent,

and that have no substantial non-infringing use, with knowledge that such components are especially made or adapted for use in infringing the '850 patent.

99. Through its actions Samsung infringes the '850 patent under 35 U.S.C. § 271(c).

100. Samsung's actions and infringement of the '850 patent are without license or authorization from Power2B.

101. Samsung's acts of infringement have caused Power2B to suffer damages. Power2B is entitled to and seeks to recover from Samsung pursuant to 35 U.S.C. § 284 the damages it has sustained as a result of Samsung's wrongful actions in an amount subject to proof at trial, and in no event less than a reasonable royalty, together with interest and costs.

102. Additionally, Samsung's acts of infringement have caused and continue to cause immediate and irreparable harm to Power2B. Unless such acts of infringement are permanently enjoined by the Court, Samsung will continue to cause immediate and irreparable harm to Power2B for which there is no adequate remedy at law. Power2B is entitled to and seeks injunctive relief pursuant to 35 U.S.C. § 283.

103. Samsung's acts of infringement have at all relevant times been willful and/or Samsung has acted with bad faith.

104. Power2B is entitled to and seeks to recover from Samsung pursuant to 35 U.S.C. § 284 the damages it has sustained as a result of Samsung's willful/bad faith infringement in an amount up to three times the amount of damages found or assessed.

VIII. COUNT THREE
(Infringement of U.S. Patent No. 9,317,170)

105. Power2B incorporates the preceding paragraphs by reference as if fully set forth.

106. Power2B owns all right, title and interest in and to the '170 patent, and holds all substantial rights pertinent thereto, including the right to sue and recover for all past, current, and future damages for Samsung's infringement.

107. The '170 patent is valid and enforceable and directed to patentable subject matter.

108. Through at least the Accused Products, Samsung infringes at least claims 1 and 30 of the '170 patent.

109. Claim 1 of the '170 patent recites: an interactive assembly.

110. The Accused Products are interactive assemblies. For example, the Accused Products have integrated Organic Light Emitting Diode (OLED) displays or Active Matrix Organic Light Emitting Diode (AMOLED) displays.

111. Claim 1 of the '170 patent recites: at least one interactive surface element, at least a first region of the at least one interactive surface element having first user sensible functionality and at least a second region of the at least one interactive surface element having second functionality, different from the first user sensible functionality.

112. The Accused Products include interactive surface elements with a first region having first user sensible functionality and a second region having second functionality different from the first user sensible functionality. For example, the Accused Products have OLED or AMOLED displays that partition different interactive functions into different respective interactive regions of the display. For example, certain menus with corresponding functionality are provided in different interactive display regions. A swipe up interaction corresponds to first user sensible functionality in a first region of the display (e.g. a bottom portion of the display), while a swipe down interaction corresponds to second user sensible functionality in a second

region of the display (e.g. a top portion of the display). The swipe up and swipe down interactions have different respective functions.

113. Claim 1 of the '170 patent recites: at least one input sensor located in propinquity to at least one of the at least one interactive surface element, each of the at least one input sensor being configured to provide an output indicative of an impingement of an electromagnetic radiation spot on at least one of the at least one first region and the at least one second region of the at least one interactive surface element.

114. The Accused Products include one or more object-detection sensors or input sensors located near one of the interactive surface elements. The object-detection sensors are configured to provide an output indicative of an impingement of an electromagnetic radiation spot on at least one of the at least one first region and the at least one second region of the at least one interactive surface element. For example, the object-detection sensors in the Accused Products detect proximate objects based on electromagnetic radiation reflected by the objects. The object-detection sensors detect electromagnetic radiation reflected by the objects, which impinges on at least one of the first or second region of the interactive surface element. The object-detection sensors provides an output indicating the impingement to additional circuitry, such as utilization circuitry.

115. Claim 1 of the '170 patent recites: utilization circuitry coupled to the output of each of the at least one input sensor.

116. The Accused Products have utilization circuitry coupled to the output of each of the object-detection sensors. For example, the Samsung Galaxy S4-S6 and Note 3-4 devices employ utilization circuitry coupled to the output of the object-detection sensors to support a suite of "Air gesture" features. Likewise, the Samsung Galaxy S7-S20 and Note 5-20 devices

employ utilization circuitry to support gesture controls, gesture wake up, easy mute, and easy screen turn on.

117. Claim 1 of the '170 patent recites: wherein the at least one input sensor includes a detector assembly arranged at least one edge of the interactive surface element, and wherein the detector assembly includes a support substrate and an arrangement of detector elements.

118. The object-detection sensors in the Accused Products includes a detector assembly arranged at least one edge of the interactive surface element, and the detector assembly includes a support substrate and an arrangement of detector elements. For example, the Accused products position respective object-detection sensors along a top edge of the interactive surface element. In addition, the object-detection sensors are supported by respective substrates and include an arrangement of detector elements. In this fashion, the object-detection sensors can detect gesture movements and directions, which is required to support the suite of "Air gesture" features and/or gesture controls, gesture wake up, easy mute, and easy screen turn on.

119. For example, upon information and belief, the object-detection sensors in the Accused Products include a Maxim MAX88920 Integrated Chip (IC) proximity sensor, an AMS AG TMD490X IC ambient light/proximity sensor, or an equivalent sensor. Each of these sensors includes a support substrate and an arrangement of detector elements.

120. Claim 1 of the '170 patent recites: wherein the arrangement of detector elements is configured to detect electromagnetic radiation at a baseline level and to sense a position of at least one object with respect to the interactive surface element and wherein the utilization circuitry is further configured to provide an output according to a location of at least one detector element in the arrangement for which at least one of an amount of radiation detected and a change in the amount of radiation detected exceed a first predetermined threshold.

121. The object-detection sensors in the Accused Products include the arrangement of detector elements, which are configured to detect electromagnetic radiation at a baseline level and to sense a position of at least one object with respect to the interactive surface element and wherein the utilization circuitry is further configured to provide an output according to a location of at least one detector element in the arrangement for which at least one of an amount of radiation detected and a change in the amount of radiation detected exceed a first predetermined threshold. For example, the Accused Products employ one or more respective object-detection sensors that comprise detector elements for sensing electromagnetic radiation at a baseline level. The detector elements further sense a position of an object (e.g. a hand) with respect to the device surface. The utilization circuitry, which is coupled to the output of the object-detection sensors, provides an output according to the location of the detector element when the change in the amount of radiation detected exceeds a first predetermined threshold. Upon information and belief, the utilization circuitry converts the output signals from object-detection sensors into meaningful inputs for controlling device operations. For example, the utilization circuitry supports gesture controls, gesture wake up, easy mute, and easy screen turn on, as well as Samsung's Air gestures.

122. Samsung has infringed and continues to infringe the '170 patent under 35 U.S.C. § 271(a), directly, literally and/or under the doctrine of equivalents, by making, using, selling, and/or offering to sell in the United States and/or importing into the United States, the Accused Products, during the term of the '170 patent.

123. Samsung has actual knowledge of the '170 patent, and has had knowledge of the '170 patent at all relevant times, and knows the above-described actions, if taken, would constitute infringement of the '170 patent.

124. Alternatively, Samsung believes there is a high probability that others will infringe the '170 patent as a result of its actions but has remained willfully blind to the infringing nature of those actions.

125. Samsung took the above-described actions with the intent to cause acts of infringement of the '170 patent by others, such as its customers and end-users.

126. Samsung has actively induced infringement and continues to actively induce infringement of the '170 patent under 35 U.S.C. § 271(b) by making, selling, offering to sell, and/or importing the Accused Products, and through activities relating to selling, marketing, advertising, promotion, support, and/or distribution of the Accused Products.

127. Samsung infringes the '170 patent by contributing to the infringement of others, such as its customers and end-users, by making, selling, offering to sell, and/or importing or exporting one or more components of the Accused Products used to practice one or more claims of the '170 patent, that constitute a material part of the invention(s) claimed in the '170 patent, and that have no substantial non-infringing use, with knowledge that such components are especially made or adapted for use in infringing the '170 patent.

128. Through its actions Samsung infringes the '170 patent under 35 U.S.C. § 271(c).

129. Samsung's actions and infringement of the '170 patent are without license or authorization from Power2B.

130. Samsung's acts of infringement have caused Power2B to suffer damages. Power2B is entitled to and seeks to recover from Samsung pursuant to 35 U.S.C. § 284 the damages it has sustained as a result of Samsung's wrongful actions in an amount subject to proof at trial, and in no event less than a reasonable royalty, together with interest and costs.

131. Additionally, Samsung's acts of infringement have caused and continue to cause immediate and irreparable harm to Power2B. Unless such acts of infringement are permanently enjoined by the Court, Samsung will continue to cause immediate and irreparable harm to Power2B for which there is no adequate remedy at law. Power2B is entitled to and seeks injunctive relief pursuant to 35 U.S.C. § 283.

132. Samsung's acts of infringement have at all relevant times been willful and/or Samsung has acted with bad faith.

133. Power2B is entitled to and seeks to recover from Samsung pursuant to 35 U.S.C. § 284 the damages it has sustained as a result of Samsung's willful/bad faith infringement in an amount up to three times the amount of damages found or assessed.

IX. COUNT FOUR
(Infringement of U.S. Patent No. 9,569,093)

134. Power2B incorporates the preceding paragraphs by reference as if fully set forth.

135. Power2B owns all right, title and interest in and to the '093 patent, and holds all substantial rights pertinent thereto, including the right to sue and recover for all past, current, and future damages for Samsung's infringement.

136. The '093 patent is valid and enforceable and directed to patentable subject matter.

137. Through at least the Accused Products, Samsung infringes at least claims 1 and 43 of the '093 patent.

138. Claim 1 of the '093 patent recites: an integrated display and input device.

139. The Accused Products are integrated display and input devices. For example, the Accused Products have integrated Organic Light Emitting Diode (OLED) displays or Active Matrix Organic Light Emitting Diode (AMOLED) displays.

140. Claim 1 of the '093 patent recites: a pixel array operative to provide a visually sensible output.

141. The OLED or AMOLED displays for the Accused Products include a pixel array configured to provide a visually sensible output.

142. Claim 1 of the '093 patent recites: at least one sensor operative to sense a position of an object with respect to the pixel array when the object is within a predetermined degree of propinquity to the pixel array.

143. The Accused Products include one or more object-detection sensors that operate to sense a position of at least one object with respect to the pixel array when the at least one object is within a predetermined degree of propinquity to the pixel array. For example, the object-detection sensor for each Accused Product detects light or electromagnetic radiation corresponding to the object to determine its position when an object is close or proximate to the device.

144. Claim 1 of the '093 patent recites: at least one illuminator that provides backlighting and illuminates the object within the predetermined degree of propinquity.

145. The Accused Products include at least one illuminator that provides backlighting and illuminates the object within the predetermined degree of propinquity. For example, the OLED display or an AMOLED display for the Accused Products include a backlighting illuminator that further illuminates the object within the predetermined degree of propinquity.

146. Claim 1 of the '093 patent recites: circuitry that receives an output from the at least one sensor and provides a non-imagewise input representing the position of the object relative to the pixel array to utilization circuitry.

147. The Accused Products include circuitry that receives an output from the at least one sensor and provides a non-imagewise input representing the position of the object relative to the pixel array to utilization circuitry. For example, the object-detection sensor for each Accused Product includes circuitry that converts raw signals received by photodiode sensors into non-imagewise inputs or signals and provides the imagewise inputs to utilization circuitry. These non-imagewise inputs represent the position of the object relative to the pixel array.

148. Samsung has infringed and continues to infringe the '093 patent under 35 U.S.C. § 271(a), directly, literally and/or under the doctrine of equivalents, by making, using, selling, and/or offering to sell in the United States and/or importing into the United States, the Accused Products, during the term of the '093 patent.

149. Samsung has actual knowledge of the '093 patent, and has had knowledge of the '093 patent at all relevant times, and knows the above-described actions, if taken, would constitute infringement of the '093 patent.

150. Alternatively, Samsung believes there is a high probability that others will infringe the '093 patent as a result of its actions but has remained willfully blind to the infringing nature of those actions.

151. Samsung took the above-described actions with the intent to cause acts of infringement of the '093 patent by others, such as its customers and end-users.

152. Samsung has actively induced infringement and continues to actively induce infringement of the '093 patent under 35 U.S.C. § 271(b) by making, selling, offering to sell, and/or importing the Accused Products, and through activities relating to selling, marketing, advertising, promotion, support, and/or distribution of the Accused Products.

153. Samsung infringes the '093 patent by contributing to the infringement of others, such as its customers and end-users, by making, selling, offering to sell, and/or importing or exporting one or more components of the Accused Products used to practice one or more claims of the '093 patent, that constitute a material part of the invention(s) claimed in the '093 patent, and that have no substantial non-infringing use, with knowledge that such components are especially made or adapted for use in infringing the '093 patent.

154. Through its actions Samsung infringes the '093 patent under 35 U.S.C. § 271(c).

155. Samsung's actions and infringement of the '093 patent are without license or authorization from Power2B.

156. Samsung's acts of infringement have caused Power2B to suffer damages. Power2B is entitled to and seeks to recover from Samsung pursuant to 35 U.S.C. § 284 the damages it has sustained as a result of Samsung's wrongful actions in an amount subject to proof at trial, and in no event less than a reasonable royalty, together with interest and costs.

157. Additionally, Samsung's acts of infringement have caused and continue to cause immediate and irreparable harm to Power2B. Unless such acts of infringement are permanently enjoined by the Court, Samsung will continue to cause immediate and irreparable harm to Power2B for which there is no adequate remedy at law. Power2B is entitled to and seeks injunctive relief pursuant to 35 U.S.C. § 283.

158. Samsung's acts of infringement have at all relevant times been willful and/or Samsung has acted with bad faith.

159. Power2B is entitled to and seeks to recover from Samsung pursuant to 35 U.S.C. § 284 the damages it has sustained as a result of Samsung's willful/bad faith infringement in an amount up to three times the amount of damages found or assessed.

X. COUNT FIVE
(Infringement of U.S. Patent No. 10,156,931)

160. Power2B incorporates the preceding paragraphs by reference as if fully set forth.

161. Power2B owns all right, title and interest in and to the '931 patent, and holds all substantial rights pertinent thereto, including the right to sue and recover for all past, current, and future damages for Samsung's infringement.

162. The '931 patent is valid and enforceable and directed to patentable subject matter.

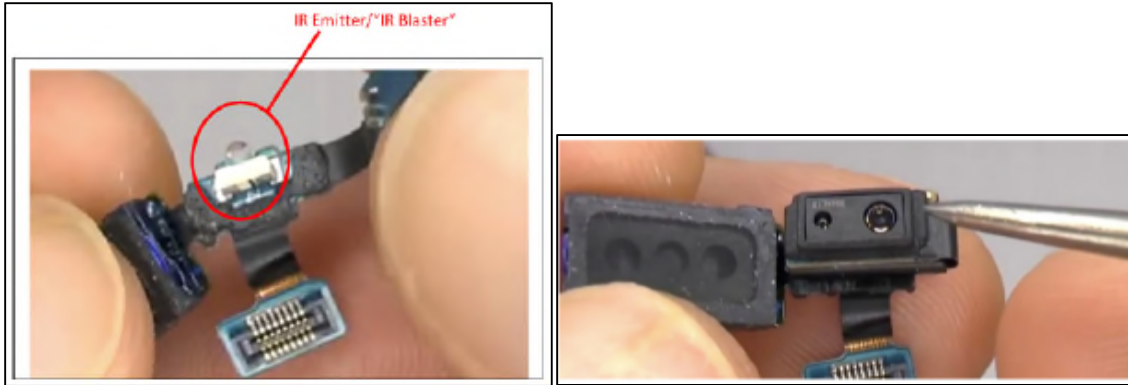
163. Through at least the Accused Products, Samsung infringes at least claims 1, 13, and 21 of the '931 patent.

164. Claim 1 of the '931 patent recites: a device comprising a display panel having a pixel array that defines a display area, the pixel array is configured to visually present digital content.

165. The Accused Products are devices that have Organic Light Emitting Diode (OLED) displays or Active Matrix Organic Light Emitting Diode (AMOLED) displays, which include pixel arrays configured to visually present digital content.

166. Claim 1 of the '931 patent recites: an Infra-Red (IR) emitter positioned proximate to the display area, the IR emitter illuminating one or more objects in proximity to the device.

167. The Accused Products include an IR emitter positioned proximate to the display area and the IR emitter illuminates objects in proximity to the device. For example, below are two photos of Samsung Galaxy S4 device sensors. The sensors include an IR emitter (left) and a proximity sensor or an IR sensing array (right). These sensors are positioned proximate to the display screen along the top of the Samsung Galaxy S4 device.



168. Upon information and belief, the Samsung Galaxy S5-7 devices and Samsung Note 3-4 devices include an IR emitter positioned proximate to the display area to illuminate objects in proximity to the device.

169. Upon information and belief, the Samsung Galaxy S8-20 and Samsung Note 5-20 devices have object-detection sensors with integrated IR emitter elements positioned proximate to the display area and that illuminate one or more objects in proximity to the device.

170. Claim 1 of the '931 patent recites: a position sensing array positioned proximate to at least one edge of the display area, the position sensing array is configured to receive, through at least one layer of the display panel, at least a portion of light reflected by an object in proximity to the device and generate an output signal that represents an amount of the portion of light.

171. Each Accused Product includes one or more object-detection sensors or position sensing arrays positioned proximate to at least one edge of the display area. For example, the Accused Products position respective object-detection sensors along a top edge of the display area. The object-detection sensors are further positioned behind at least one layer of the display panel, and receive through at least one layer of the display panel, at least a portion of light reflected by an object in proximity to the device. The object-detection sensors further generate an output signal that represents an amount of the portion of light.

172. Claim 1 of the '931 patent recites: a processing unit configured to receive the output signal from the position sensing array, determine the output signal exceeds a predetermined threshold, and calculate, based on the output signal, a position of the object relative to the device when the output signal exceeds the predetermined threshold, and execute input functionality corresponding to the position of the object.

173. The Accused Products include one or more processing units (e.g. Hummingbird or Exynos processors) that receive the output signal from the respective object-detection sensor(s) or the position sensing array. The processing units for the Accused Products further determine the output signal exceeds a predetermined threshold, and calculate, based on the output signal, a position of the object relative to the device when the output signal exceeds the predetermined threshold. The processing units further execute input functionality. For example, the processing units for the Accused Products execute input functionality such as gesture controls, gesture wake up, easy mute, and easy screen turn on, and/or "Air gestures" based on the position of the object.

174. Claim 13 of the '931 patent recites: a method for determining a position of an object relative to a device.

175. The Accused Products employ object-detection sensors to determine the position of an object (e.g. a hand) relative to the device.

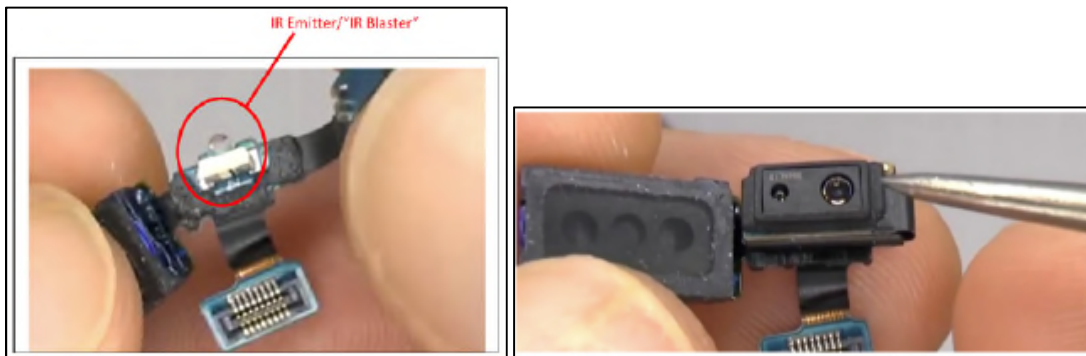
176. Claim 13 of the '931 patent recites: displaying digital content by a pixel array that defines a display area on a portion of a display panel.

177. The Accused Products have Organic Light Emitting Diode (OLED) displays or Active Matrix Organic Light Emitting Diode (AMOLED) displays that include pixel arrays for

displaying digital content. The pixel arrays further define the display area on the display panel for each Accused Product.

178. Claim 13 of the '931 patent recites: illuminating one or more objects in proximity to the device by an Infra-Red (IR) emitter positioned proximate to the display area.

179. The Accused Products illuminate objects in proximity to the device using an IR emitter positioned proximate to the display area. For example, below are two photos of Samsung Galaxy S4 device sensors. The sensors include an IR emitter (left) and a proximity sensor or an IR sensing array (right). These sensors are positioned proximate to the display screen along the top of the Samsung Galaxy S4 device.



180. Upon information and belief, the Samsung Galaxy S5-7 devices and Samsung Note 3-4 devices include an IR emitter positioned proximate to the display area to illuminate objects in proximity to the device.

181. Upon information and belief, the Samsung Galaxy S8-S20 and Samsung Note 5-20 devices have object-detection sensors with integrated IR emitter elements positioned proximate to the display area and that illuminate one or more objects in proximity to the device.

182. Claim 13 of the '931 patent recites: receiving, by a position sensing array, at least a portion of light reflected by an object in proximity to the device and through at least one layer of the display panel.

183. The Accused Products include one or more object-detection sensors or position sensing arrays located under at least one protective layer of the device display panel. The object-detection sensors further receive a portion of light reflected by the object in proximity to the device through at least one layer of the display panel.

184. Claim 13 of the '931 patent recites: generating an output signal by the position sensing array, the output signal representing an amount of the portion of light reflected by the object.

185. The object-detection sensors in the Accused Products generate an output signal representing the amount of the portion of light reflected by the object.

186. Claim 13 of the '931 patent recites: determining, by a processor, the output signal exceeds a predetermined threshold.

187. The Accused Products include one or more processors (e.g. Hummingbird or Exynos processors) that determine the output signal exceeds a predetermined threshold.

188. Claim 13 of the '931 patent recites: calculating, by the processor, a position of the object relative to the device when the output signal exceeds the predetermined threshold.

189. The processors in the Accused Products further calculate the position of the object relative to the device when the output signal exceeds the predetermined threshold. For example, the Accused Products execute or support gesture controls, gesture wake up, easy mute and easy screen turn on, which requires the processor to calculate the position of the object relative to the device when the output signal exceeds the predetermined threshold.

190. Samsung has infringed and continues to infringe the '931 patent under 35 U.S.C. § 271(a), directly, literally and/or under the doctrine of equivalents, by making, using, selling,

and/or offering to sell in the United States and/or importing into the United States, the Accused Products, during the term of the '931 patent.

191. Samsung has actual knowledge of the '931 patent, and has had knowledge of the '931 patent at all relevant times, and knows the above-described actions, if taken, would constitute infringement of the '931 patent.

192. Alternatively, Samsung believes there is a high probability that others will infringe the '931 patent as a result of its actions but has remained willfully blind to the infringing nature of those actions.

193. Samsung took the above-described actions with the intent to cause acts of infringement of the '931 patent by others, such as its customers and end-users.

194. Samsung has actively induced infringement and continues to actively induce infringement of the '931 patent under 35 U.S.C. § 271(b) by making, selling, offering to sell, and/or importing the Accused Products, and through activities relating to selling, marketing, advertising, promotion, support, and/or distribution of the Accused Products.

195. Samsung infringes the '931 patent by contributing to the infringement of others, such as its customers and end-users, by making, selling, offering to sell, and/or importing or exporting one or more components of the Accused Products used to practice one or more claims of the '931 patent, that constitute a material part of the invention(s) claimed in the '931 patent, and that have no substantial non-infringing use, with knowledge that such components are especially made or adapted for use in infringing the '931 patent.

196. Through its actions Samsung infringes the '931 patent under 35 U.S.C. § 271(c).

197. Samsung's actions and infringement of the '931 patent are without license or authorization from Power2B.

198. Samsung's acts of infringement have caused Power2B to suffer damages. Power2B is entitled to and seeks to recover from Samsung pursuant to 35 U.S.C. § 284 the damages it has sustained as a result of Samsung's wrongful actions in an amount subject to proof at trial, and in no event less than a reasonable royalty, together with interest and costs.

199. Additionally, Samsung's acts of infringement have caused and continue to cause immediate and irreparable harm to Power2B. Unless such acts of infringement are permanently enjoined by the Court, Samsung will continue to cause immediate and irreparable harm to Power2B for which there is no adequate remedy at law. Power2B is entitled to and seeks injunctive relief pursuant to 35 U.S.C. § 283.

200. Samsung's acts of infringement have at all relevant times been willful and/or Samsung has acted with bad faith.

201. Power2B is entitled to and seeks to recover from Samsung pursuant to 35 U.S.C. § 284 the damages it has sustained as a result of Samsung's willful/bad faith infringement in an amount up to three times the amount of damages found or assessed.

XI. EXCEPTIONAL CASE

202. This is an exceptional case and Power2B is entitled to and seeks a determination and ruling from the Court that this case is exceptional and awarding its reasonable and necessary attorneys' fees pursuant to 35 U.S.C. § 285.

XII. JURY DEMAND

Pursuant to Federal Rule of Civil Procedure 38(b), Power2B demands a trial by jury on all issues so triable.

XIII. PRAYER FOR RELIEF

Power2B prays that the Court enter judgment in its favor and against Samsung as follows:

- a) a judgment and award that Samsung has infringed, either literally and/or under the doctrine of equivalents, each of the Asserted Patents;
- b) a judgment and order finding that Samsung's infringement has been willful;
- c) a permanent injunction prohibiting Samsung from further acts of infringement;
- d) a judgment and order requiring Samsung to pay Power2B its damages, costs, expenses, and enhanced damages to which Power2B is entitled due to Samsung's infringement and willfulness;
- e) a judgment and order requiring Samsung to provide an accounting and to pay Power2B supplemental damages, including without limitation, pre-judgment and post-judgment interest;
- f) a judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding Power2B its reasonable and necessary attorneys' fees; and
- g) such other and further relief to which it may be entitled.

Dated: December 23, 2020.

Respectfully submitted,

By: /s/ Jason A. Wietjes

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